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MORTALITY DUE TO FOOT-AND-MOUTH DISEASE AMONG CATTLE AND SWINE
IN THE UKRAINE AFTER THE EPIZOOTIC OF 1967-69.

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The problem concerning the losses originating from foot-and-mouth disease has been studied by researchers such as A.L. Skomorohov, 1928; G.F. Bondarenko, 1959; M.I. Gushchin, 1961; A.S. Chernov, 1962; F.H. Ahmatzyanov, 1964; O.O. Sviridov, Ya.F. Gubsky, V.M. Iutov, 1965; G.F. Bondarenko, S.R. Didovets, 1970 et al. According to data furnished by these authors the economic losses due to foot-and-mouth disease consist of the death and forced slaughter of animals, reduced productivity and live weight, smaller number of issues born, as well as quarantine expenses. The magnitude of the loss during the disease depends on the course of the disease, animal keeping conditions, the level of organization and other measures. Most of the losses occurring during a foot-and-mouth disease epizootic comprise reduced productivity and live weight loss. Based on materials about the magnitude of losses and expenses occurring during the fight against foot-and-mouth disease in periods of epizootics, M.I. Gushchin (1961) has determined the economic effectiveness of veterinary-cum-sanitary measures.

However, animals do fall victim to foot-and-mouth disease not only during epizootics, but also inter-epizootic periods. When in individual districts and regions the disease might assume considerable proportions and cause substantial losses to the farms. Even on occasional case of foot-and-mouth disease emerges due to the fact that the virus is all the time circulating in the nature. Thus, the fight against foot-and-mouth disease in this period is of great anti-epizootic importance. In this regard need arises to give economic basis for expenses required for the organization of

foot-and-mouth disease against preventive measures and liquidation of the virus from the environment. In order to achieve this objective one must know the dimensions of the loss on foot-and-mouth disease and the expenditure involved in the implementation of various measures to fight it in concrete epizootic situations.

Losses caused by the foot-and-mouth disease in the post epizootic period between 1967-1969 was investigated by us in three regions of Ukraine. During the foot-and-mouth disease epizootics in 1965-1966, 1229 thousand heads of cattle and 253 thousand swine fell victim to the disease in 1199 places in these regions.

In the post-epizootic period (1967-1969) foot-and-mouth disease flared up at 86 places. During these three years, 16574 heads of cattle and 12069 pigs fell sick.

To determine the losses we used primary commercial and book-keeping calculations, accounts of farms. Veterinary establishments and other organizations, as well as results of direct investigations concerning losses in the farms attacked by foot-and-mouth disease. The losses have been divided into: expenses on the organization of anti-foot-and mouth disease measures, quarantine expenses and losses on sick animals.

Expenses on the organization of measures to combat foot-and-mouth disease were determined in farms struck by the disease, in threatened farms in veterinary establishments and other organizations.

Farm expenditure on localization and liquidation of the virus for three years, constituted on an average, 6027 roubles for one unfortunate place. Of this sum 3521 roubles (58.4%) was spent in farms struck by the disease and 2506 roubles (41.6%) in threatened farms. The bulk of the expenses accounted for the equipping of disinfection barriers, disinfection chambers and their maintenance, e.g. on the localization and liquidation of the infection, (table 1).

Besides the above stated expenses, significant amount was allocated to the farmers by veterinary establishments and government organizations to promote the fight against foot-and-mouth disease. On an average, for one disease-stricken farm, the cost of disinfection of places and virtually the whole area of the farm (by disinfection teams) constituted 168 roubles, the organization of quarantine measures (sending out militia workers, veterinary specialists etc) cost 835 roubles; total - 1003 roubles

Enough money was spent on vaccine-prophylaxis. Taking into account the cost of the vaccine, items of asepsis and instruments as well as labor expenses, the per capita cost of vaccination for cattle amounted to 8.7 kopeck and for pigs 13.8 kopecks. According to estimates in 1 unfortunate place on an average, 14,242 roubles were spent on the inoculation of the animals within this 3 years period from the account of the state veterinary network which is double the amount on the fight against foot-and-mouth disease in state and cooperative farms (table 2).

The organization of anti-foot-and-mouth disease measures is linked with considerable expenditure in the disease stricken farms. Additional expenses for transport, losses through inopportune sale of animals and products, reduced animal productivity caused by quarantine and other expenses constituted on an average, 3874 roubles for one farm struck by the disease.

1. DIMENSIONS WITH A BREAK-DOWN OF EXPENDITURE ON THE IMPLEMENTATION OF MEASURES AGAINST FOOT-AND-MOUTH DISEASE (CALCULATED FOR 1 DISEASES STRICKEN PLACE RB).

Expenses	Total	Including	
		Farms hit by the disease	Threatened farms
	Rb	Rb	Rb
Equipping of disinfection barriers disinfection chambers and their maintenance.	2783	1471	1312
Fuel, transport, special dresses	1731	873	858
Transportation of feed decontamination of the manure, maintenance of hygiene on the territory of the farm, etc.	1513	1177	336
Total	6027	3521	2506

2. LOSSES ON FOOT-AND-MOUTH DISEASE IN POST-EPIZOOTIC PERIOD (CALCULATED FOR 1 DISEASE STRICKEN PLACE)

Category of Loss	Sum of the losses	
	Rb	%
<u>In Farms</u>		
Expenses on anti-foot-and-mouth disease measures	6027	21.6
Quarantine Expenses	3874	13.9
Losses on overcoming the disease	2746	9.8
Total animals	12647	45.3
<u>In veterinary establishments</u>		
Total expenses	15252	54.7
Including money for vaccination	14248	51.1
Total losses	27899	100

Thanks to timely implementation of veterinary-cum-quarantine measures for the localization of the virus, losses on reduced productivity and forced slaughter of the animals constituted on an average, 2746 Rb., for one farm. Thus, losses originating from foot-and-mouth disease in post-epizootic period amounted to 28 thousand approximately for one disease stricken place in the three regions.

During these three years in the three regions, foot-and-mouth disease caused losses of 2370 roubles. One tenth of this sum consisted of losses on sick animals, 77% - were the expenses on the fight against foot-and-mouth disease and 13% amounted to losses caused by quarantine.

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